

## REMARKS

### I. 35 USC § 101 Rejection

The Examiner has rejected claims 1-6, 16-18, 20-21, 25, 27, 34-36, 39, 64, 66-67, and 69-74 under 35 USC § 101 as being directed toward non-statutory subject matter. While these claims have been canceled in favor of new claims 75 – 99, Applicant addresses this rejection as it pertains to the new claims.

#### **A. The Standard Applied To The Method Claims Of The Present Application Under 35 USC § 101 Has Changed And Is Not The Current Law**

The Examiner based his 35 USC § 101 rejection based on a standard no longer employed by the USPTO. The current standard when evaluating the statutory characteristic of method claims was set out in the Court of Appeals for the Federal Circuit (CAFC) decision of *In re Bilski*. Thus, the Examiner's assertion that the previous method claims are abstract ideas that do not produce any concrete, useful, and tangible results (while wholly inaccurate in Applicant's view) is not the proper standard of review.

Under the *Bilski* standard, a method claim must either (i) include use of a specific machine that imposes meaningful limits on the scope of the claim that is not merely an insignificant post solution activity, or (ii) the method must transform an article to a different state or thing that imposes meaningful limits on the scope of the claim that is not merely an insignificant post solution activity. Any claim that meets *either* of these conditions is considered statutory.

Applicant submits that the present claims read in light of the specification meet both prongs of the *Bilski* test and are therefore statutory. For instance, Fig. 2 and paragraphs [0067] – [0075] clearly set out and describe the environment in which the present invention is practiced. This environment includes a variety of hardware and

software embedded therein sufficient to produce a special purpose machine and system for carrying out the steps of the method that imposes meaningful limits on the scope of the claim that is not merely an insignificant post solution activity. Moreover, the method transforms an article (partially unspecified query) to a different state or thing (query matches – i.e., search results) that imposes meaningful limits on the scope of the claim that is not merely an insignificant post solution activity satisfying the second prong of the Bilski test.

Applicant requests reconsideration and withdrawal of the 35 USC §101 rejection.

## **II. 35 USC § 102(e) Rejection**

The Examiner has rejected claims 1-6, 16-18, 20-21, 25, 27, 34-36, 39, 64, 66-67, and 69-74 under 35 USC § 102(e) as being anticipated by U.S. Pat. No. 6,922,810 (hereinafter Trower). While these claims have been canceled in favor of new claims 75 – 99, Applicant addresses this rejection as it pertains to the new claims.

### **A. Overview of The Trower Reference Teachings And The Claims of the Present Application**

The Trower reference generally teaches a grammar based auto complete user interface system for completing input requests to a variety of computer applications and/or software modules. Trower analyzes incomplete user input and provides one or more auto-complete options that the user can select from to complete the input request (*Abstract – Trower*). Trower’s goal is to convert a partially complete input request into a fully complete input request without the user having to specify every character. This is in contrast to the claims of the present invention which describe analyzing a partially unspecified (*but fully complete*) query request so that one or more matches to the partially unspecified input query can be presented to the user as search results (*Abstract – Present Application*). Trower is directed toward a user interface tool for

carrying out commands or instructions while the present application is directed toward a query matching search/retrieval tool. Trower seeks to match partial user input with fully specified user requests based on a set of grammar rules. Thus, a partial request in Trower is analyzed and converted to a specific request based on a set of grammar rules. The present application describes and claims a method that analyzes a partially unspecified query having a specific matching restriction associated with the partially unspecified portion of the query, searches one or more documents for matches to the query, and returns the query matching portions of the documents as results to the original query.

A first fundamental difference between Trower and the present application is that Trower analyzes partially complete (or partially incomplete) input requests. The input requests are not queries designed to provide information but are user input commands intended as input to computer applications or software modules (*See, c.1, Ins. 54-59 - Trower*). The claims of the present invention, however, describe analyzing fully complete queries that include a partially unspecified *term* with the intent of processing the query against a document repository to return query matches as a result. The query matches provide answers to the original query. A partially unspecified term according to the present application includes a restriction that defines a particular set of character sequences that can match the term (*See, ¶ [0093] - Present Application*). The set of terms represented by a partially unspecified term can be defined by characteristics a member must possess to satisfy the associated restriction. Examples of restrictions include categories such as proper name, location, country, date, unit of measurement, company name, baseball players, etc. - (*See, ¶ [0103] - Present Application*).

For instance, consider the query “Agatha Christie was born in\_[num]” in which \_[num] is the partially unspecified term. In this case, a match to the query would require a document to contain a string that included the phrase “Agatha Christie was born in” followed by a number (it could be any number but must be a number) (*See, ¶ [0094] - [0098] - Present Application*). However, the context and structure of the query

make it such that the likely result will be “Agatha Christie was born in 1890”. Compare this to the query “Agatha Christie born in\_[location]”. This time a match could look like “Agatha Christie was born in England” since “England” fits the restriction defined by the partially unspecified term [location].

A second fundamental difference between Trower and the present application is that Trower’s “variables” automatically correspond user input with a category or function while the matching restriction of a partially unspecified term must be verified according to the claims of the present invention. In other words, Trower forces the variable definition onto the user input. In Trower, the rule “open %document%+” where %document% is the wildcard variable would analyze the partial input data “open my resume” and force “my resume” to match the variable whether or not it actually is (*See, c.10, lns. 7-14 - Trower*). Whereas, potential matches to the partially unspecified term of a query must satisfy the actual matching restriction as taught and claimed in the present application. If the matching restriction is [num], the document text must contain an actual number (*See, e.g., ¶ [0094] - Present Application*). Moreover, Trower’s rules are applied to forming complete input requests (not queries) while the claims at issue are directed toward answering queries.

**B. The Trower Reference Fails To Teach Receiving A Query Containing A Partially Unspecified Term Associated With A Matching Restriction And Does Not Determine Matches For The Query Based On The Partially Unspecified Term Associated With A Matching Restriction**

With respect to (now canceled) claim 1, the Examiner cites col. 10, lns. 20-26 of Trower as teaching “receiving a query comprised of one or more fully specified terms and one or more at least partially unspecified terms pertaining to the information need wherein the at least partially unspecified terms are separate from the one or more fully specified terms in the query and the at least partially unspecified terms include a predefined character sequence representing a matching restriction;”

The above referenced section (col. 10, Ins. 20-26 of Trower) has been mischaracterized by the Examiner with respect to the claims of the present application. First and foremost, the user in Trower did not enter what the Examiner erroneously considers a partially unspecified term (%symbol%). The actual user input in the cited passage is “*what is Microsoft trading at*”. This user input does not include any partially unspecified terms. An associated grammar rule is comprised of “what is %symbol%+ trading at”. The grammar rule is completely separate from the user query and specifies what to do with the user input.

Thus, Trower does not *receive a query* including a partially unspecified term. The grammar rule will equate the term in the user query to the corresponding %symbol%+ term in the grammar rule regardless of the terms actual content. The user could just have easily entered “What is gh%\$#jkl trading at” and the grammar rule would automatically equate the nonsensical term gh%\$#jkl to the %symbol%+ term even though it is jibberish and attempt to look up a stock price for a non-existent ticker symbol.

There is no disclosure in Trower of a partially unspecified term and, as a result, no disclosure of a matching restriction for the partially unspecified term in a user query.

The second clause of (now canceled) claim 1 requires, “*determining one or more matches for the query, wherein a criterion for determining one of said matches specifies that (i) a relative order of at least one term of said query need not be preserved with respect to at least one other term included in said query, and (ii) said one or more matches for the query are determined in accordance with said matching restriction.*” Determining query matches for the query as described and claimed in the present application involves returning query matches or search results based on a *fully complete but partially unspecified* query. Trower does not determine matches for a query but rather auto-completes user input to create a fully specified user instruction.

Trower has cited col. 10, Ins. 1-7 as teaching the above quoted clause. However, that citation merely reinforces that variables are the same as wildcards in that they can be matched by any user input meaning that no matching restriction is taught.

Wildcards, as explained in the present application, are not the same as a partially unspecified term (*See*, ¶ [0108] - *Present Application*).

In addition, the cited portion is referring to the grammar rules. “Actual data that is input by the user that ‘matches’ the variable is communicated to the corresponding software module for processing.” Trower - Col. 10, Ins. 5-7.

The cited portions of Trower clearly demonstrate that the user does not provide a partially unspecified term in the actual input query. Nor does Trower determine one or more matches for the query and return such matches from documents searched as results. Trower’s list of options for auto-completing a user input request are not the same as nor equivalent to determining query matches for a query as claimed in the present application.

### **C. The Trower Reference Fails To Teach The Concept Of Indexes, Contexts Within Indexes, And The Use Of Finite State Automats With Respect To Document Searching**

With respect to dependent claims, the Examiner’s characterizations of Trower’s teachings regarding the claim terms of *indexes*, *contexts*, and *finite state automats/transducers* is inaccurate and unsupportable using the cited portions and/or the reference as a whole.

As explained and claimed in the present application, an index identifies documents that contain terms. The index may also store the location of documents within a database and information identifying terms that satisfy restrictions (*See*, ¶ [0026] - *Present Application*). Contexts correspond to linguistically analyzed text strings containing a given term in which the text strings occur within the documents (*See*, ¶ [0033] - *Present Application*). A finite state automaton (FSA) is a structure having a finite number of states including an initial and final state connected by arcs. The FSA is driven from state to state by a sequence of inputs (*See, e.g.,* ¶ [0026] and Fig. 24 - *Present Application*).

The index, contexts, and FSAs are implemented as database searching techniques that optimize the process of finding query matches to user queries. The Examiner has cited Trower - Col. 10, Ins. 20-26 as teaching indexing and contexts within the indexes.

Trower - Col. 10, Ins. 20-26 states, *"For example, if a rule in grammar module 230 were "what is %symbol%+ traing at", and if the user entered the data input "what is Microsoft trading", then analysis module 212 would indicate that the rule matches the partial data input, with %symbol%+ matching "Microsoft". If the matching rule were accepted by the user, then the rule "what is Microsoft trading at" would be included in history 232."* This passage merely describes equating or matching the portion of the user input "Microsoft" with the portion of the grammar rule %symbol%+. There is no teaching or disclosure whatsoever of an index identifying documents or contexts within such an index. Trower does not describe interactions with documents in an attempt to search for matches to a user query. Trower describes a software application that operates on partial user input in order to complete the input request and forward the input request/command to the appropriate software module for execution. Trower is not a tool/application for providing results to search queries and therefore does not interact with a plurality of documents and has no need to create indexes, contexts, or finite state automats pertaining to the documents and query terms. The terms "index" and "finite" do not appear anywhere in the Trower reference.

In stating that Trower teaches finite state automats and finite state transducers, the Examiner merely cites to and equates the term "computer" as set forth in col. 2, Ins. 49-52 to a finite state automaton (FSA). Such a characterization is woefully inadequate and inaccurate given the present application's description of the terms finite state automaton (FSA) and finite state transducer (FST) in paragraphs [0172] and [0184] respectively.

### III. Conclusion

In sum, Trower does not receive a query containing a partially unspecified term associated with a matching restriction. Trower also does not determine matches for the query based on the partially unspecified term associated with a matching restriction. Nor does Trower teach the concept of indexes, contexts within indexes, and the use of finite state automats with respect to document searching. Rather, Trower endeavors to determine the remainder of a user input request based on (i) the partial input, (ii) a set of grammar rules, (iii) the user's recent data entry history, (iv) a user context, and (v) a scoring process. Trower – col. 3, lns. 29-35.

Applicant has shown that there are clear errors in the Examiner's rejections as well as omissions of one or more essential elements needed for a prima facie rejection. As such, applicant respectfully requests reconsideration and withdrawal of the 35 USC §102(e) rejections based on Trower as well as the 35 USC §101 rejection. It is applicants' belief that the references cited do not teach all the elements and limitations recited in the claims as required under 35 USC §102(e).

Applicant believes that all of the Examiner's objections and rejections have been addressed and overcome and requests that all such objections and rejections be withdrawn.

Respectfully submitted,

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